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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	:	Docket: OT-4551
Frederick H. Barker, et. al.	:	Date: March 12, 2003
Appln. No. 09/406,445	:	Group Art Unit: 3652
Filing Date: September 27, 1999	:	Examiner: T. Tran

Title: CONCRETE RAIL SAFETY DEVICE FOR AN ELEVATOR CAR

Commissioner for Patents
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Director of Patients and Trademarks, Washington, D.C. 20231 on

March 12, 2003

Mary Toscano
Signature

March 12, 2003
Date

APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES PURSUANT TO 37 C.F.R.§1.191

1. REAL PARTY IN INTEREST

The real party in interest is Otis Elevator Company. The assignment of assignor's interest was recorded on September 27, 1999 at reel 10278, frame 784.

2. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to appellant, the appellant's legal representative, or assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

3. STATUS OF CLAIMS

Claims 15-34 are pending.

Claims 25-31, 33 and 34 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing non-enabled subject matter, for failing to recite features that allegedly are critical or essential to the practice of the invention.

Claims 15-20, 23, 25-30 and 33 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over DE 2 054 936 (DE '936) in view of GB 2 190 356 (GB '256).

Claims 21 and 31 stand rejected under § 103(a) as allegedly being unpatentable over DE '936 in view of GB '356, and further in view of US 5,531,295 (Kopman).

Claims 24 and 34 stand rejected under § 103(a) as allegedly being unpatentable over DE '936 in view of GB '356, and further in view of US 5,065,845 (Pearson).

Claims 1-14 have been canceled. Claims 22 and 32 have been withdrawn as being drawn to a non-elected species.

4. STATUS OF AMENDMENTS

No amendments were filed subsequent to the rejection.

5. SUMMARY OF INVENTION

Claims 15 and 25 are the sole independent claims.

Claim 15 recites a guide rail safety device, for an elevator car riding on a non-metallic guide rail formed of concrete. The guide rail safety device comprises a housing and a wedge disposed in the housing. The wedge has a friction surface aligned for contact with the non-metallic guide rail. At least one horizontal locator is disposed in the housing, for engaging the wedge and urging the friction surface into contact with the non-metallic guide rail so that the friction surface is wedged against the non-metallic guide rail by motion of the elevator car along the non-metallic guide rail. An actuator is provided for triggering urging of the friction surface by the horizontal locator. The friction surface is sized and the wedge is shaped so that, when urged by the horizontal locator into contact with the non-metallic guide rail, the friction surface is wedged against the non-metallic guide rail with a pressure of not more than approximately 50 psi on the non-metallic guide rail, arresting the motion of the elevator car.

Claim 25 recites a guide rail safety device, for an elevator car riding on a non-metallic guide rail. The guide rail safety device comprises a housing and a wedge disposed in the housing. The wedge has a friction surface aligned for contact with the non-metallic guide rail. The friction surface is formed of a material that has a coefficient of friction of approximately 1.0 relative to the non-metallic guide rail. At least one horizontal locator is disposed in the housing for engaging the wedge and urging the friction surface into contact with the non-metallic guide

rail so that the friction surface is wedged against the non-metallic guide rail by motion of the elevator car along the non-metallic guide rail. An actuator is provided for triggering urging of the friction surface by the horizontal locator.

Support for the invention claimed in claim 15 is found throughout the specification, for example in the paragraphs beginning at page 4, line 9 and page 5, line 18.

Support for the invention claimed in claim 25 is found throughout the specification, for example in the paragraphs beginning at page 4, line 9 and page 5, line 9.

As noted in the subject specification, the claimed coefficient of friction is higher than what would be employed in a conventional safety for use with a steel guide rail, and allows the safety to exert the necessary stopping force while applying a lower pressure against the non-metallic rail. Reducing the pressure is beneficial, since high, concentrated compressive forces could easily damage non-metallic guide rails, especially concrete rails.

6. ISSUE(S)

(a) Whether claim 25 fails to recite features that are critical or essential to the practice of the invention in violation of § 112, first paragraph.

(b) Whether claim 15 is unpatentable under § 103(a) over DE '936 in view of GB '256.

(c) Whether claim 25 is unpatentable under § 103(a) over DE '936 in view of GB '256.

7. GROUPING OF CLAIMS

For the purposes of this Appeal, the claims will be grouped as follows:

I. claims 15-21 and 23-24 will be grouped together, and

II. claims 25-31 and 33-34 will be grouped together.

Only independent claim 25 is rejected under § 112, first paragraph, and independent claims 15 and 25 recite subject matter that is patentable over the cited art for different reasons, as set forth more fully below.

8. **ARGUMENT(S)**

(a) Whether claim 25 fails to recite features that are critical or essential to the practice of the invention in violation of § 112, first paragraph.

According to the Final Rejection, claims 25-31, 33 and 34 allegedly containing non-enabled subject matter under 35 U.S.C. § 112, first paragraph. The Final Rejection indicates that "concrete guide rails" are critical or essential to the practice of the invention, and that claims which do not recite a concrete guide rail in combination with a friction surface in order to provide a given coefficient of friction are invalid.

Initially, Applicants note that although the claims of the subject application do not positively claim a non-metallic guide rail, the recitation of such in each claim does define structural features of the claimed safety device. These features, such as coefficient of friction, are pertinent to the patentability of the subject claims. See, for example, the discussion in MPEP 2111.02 of *In re Stencel.*

Claim 25 recites that the friction surface is formed of a material that has a coefficient of friction of approximately 1.0 relative to the non-metallic guide rail, but does not specify that the guide rail is concrete. Although the specification indicates that the rails are *preferably* constructed of a high compression strength material *such as* concrete (page 4, lines 3-5), nowhere does the specification indicate that concrete is critical. The value of the specified relative coefficient of friction pertains to any frangible, non-metallic guide rail.

According to MPEP 2164.08(c):

> Features which are merely preferred are not to be considered critical. *In re Goffe*, 542 F.2d 564, 567, 191 USPQ 429, 431 (CCPA 1976).
>
> Limiting an applicant to the preferred materials in the absence of limiting prior art would not serve the constitutional purpose of promoting the progress in the useful arts. Therefore, an enablement rejection based on the grounds that a disclosed critical limitation is missing from a claim should be made only when the language of the specification makes it clear that the limitation is critical for the invention to function as intended. Broad language in the disclosure, including the abstract, omitting an allegedly critical feature, tends to rebut the argument of criticality.

The Final Rejection refers to several passages in the specification, each of which relates expressly to a preferred embodiment or an example. None of the cited passages indicates that

concrete is critical. Regarding the assertion in the Final Rejection that optimum pressure is based on the characteristics of concrete, Applicants note the pressure level is not specified in claim 25.

The mere fact that the specification does not explicitly describe friction surface materials having the specified coefficient relative to any other non-metallic guide rail material besides concrete, does not preclude claiming a friction surface material having the specified coefficient relative to a non-specified non-metallic guide rail. Once the teachings of the subject application are taken into account, it would have been abundantly clear to one of skill in the art how to select a friction surface having the desired coefficient of friction relative to any selected non-metallic guide rail.

Therefore, the Examiner has failed to meet his burden of establishing that claim 25 is not enabled under § 112, first paragraph.

(b) Whether claim 15 is unpatentable under § 103(a) over DE '936 in view of GB '256.

According to the Final Rejection, claims 15-20 and 23 are unpatentable over DE '936 in view of GB '356, claim 21 is unpatentable over DE '936 in view of GB '356, and further in view of US 5,531,295 (Kopman), and claim 24 is unpatentable over DE '936 in view of GB '356, and further in view of US 5,065,845 (Pearson).

The Final Rejection states that DE '936 discloses an elevator system comprising a plurality of non-metallic guide rails formed of concrete 5. According to the Final Rejection, one having ordinary skill in the art would recognize that ribs 5 of DE '936 are guide rails. The Final Rejection admits that DE '936 does not disclose a guide rail safety device, and relies of GB '356 for the teaching of such a device. According to the Final Rejection, it would have been obvious "to have utilized a guide rail safety device for the elevator system taught in DE '936 as taught by GB '356 in order to provide a self-regulating safety brake for the elevator system."

When an application is submitted to the Patent and Trademark Office, case law dictates that 35 U.S.C. §103 places the burden of proof on the PTO to establish a prima facie case of

obviousness.[1] Once the prima facie case has been established, then the burden of going forward with the evidence to rebut the prima facie case shifts to the applicant. Only the burden of going forward with evidence to rebut shifts to the applicant, however. The burden of persuasion remains with the PTO.

In order to support a prima facie obviousness type rejection, the Examiner must take into account all the limitations in the rejected claim,[2] including any limitations expressed using functional language.[3] Further, the obviousness must be determined based on the claimed subject matter as a whole, including any results and advantages produced by the claimed subject matter.[4] Further, to establish a prima facie case of obviousness, there must be some teaching, suggestion or incentive to support the specific combination of references.[5]

Applicants respectfully submit that the Examiner has not met the burden of proof required to support a rejection under 35 U.S.C. §103.

Initially, Applicants do not have an English-language translation of DE '936. Nevertheless, Applicants will attempt to address the merits of the rejections based on Applicants' understanding of that document.

Applicants respectfully disagree with the assertion that one having ordinary skill in the art would recognize that ribs 5 of DE '936 are guide rails. It is not apparent to Applicants from DE '936 how the tapered ribs 5 contribute to the guidance of the car. According to Applicants' understanding, similar tapered ribs 8 are provided for the counterweight 10. As can be seen in Fig. 2 of DE '936, these ribs 8 appear to bracket the counterweight 10. However, it appears that guide wires or the like (reference numeral 11) are provided to serve the actual guiding function for the counterweight, whereas the ribs 8 apparently prevent the counterweight from jumping off the guide wires 11. If the guidance of the car is similar to that for the counterweight, then Applicants do not believe that the ribs 5 can be fairly considered to be guide rails. Otherwise, it

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[1] In re Fritch, 23 U.S.P.Q. 2d. 1780 (Fed. Cir. 1992), In re Piasecki, 745 F.2d. 1468, 1471-1472, 223 U.S.P.Q. 785, 787-788 (Fed. Cir. 1984).

[2] Carl Schenck, A.G. v. Nortron Corp., 713 F.2d 782, 218 U.S.P.Q. 698 (Fed. Cir. 1983); Carman Industries v. Wahl, 724 F.2d 932, 220 U.S.P.Q. 481 (Fed. Cir. 1983).

[3] Lewmar Marine, Inc. v. Barient, Inc., 827 F.2d 744, 3 U.S.P.Q.2d 592 (Fed. Cir. 1983).

[4] Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 7 U.S.P.Q.2d 1315 (Fed. Cir. 1988); In re Chupp, 816 F.2d 643, 2 U.S.P.Q.2d 1437 (Fed. Cir. 1987); Fromson v. Advanced Offset Plate, 755 F.2d 1549, 225 U.S.P.Q. 26 (Fed. Cir. 1985).

[5] In re Geiger, 815 F.2d 686, 2 U.S.P.Q.2d 1276 (Fed. Cir. 1987); ACS Hospital Systems Inc. v. Montefiore Hospital, 732 Fed.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984).

is not clear how the ribs 5 are utilized. Thus, Applicants do not understand DE '936 (and therefore the asserted combination) to disclose or suggest the features recited in claim 15 regarding a non-metallic guide rail formed of concrete, an elevator car riding on such a guide rail, or a friction surface that is wedged against the non-metallic guide rail *by motion of* the elevator car along the non-metallic guide rail.

Further, even assuming that DE '936 discloses non-metallic guide rails and an elevator car riding on such a guide rail, it is not believed that one of skill in the art would have been disposed on any objective basis to combine the cited documents as suggested in the Final Rejection in order to utilize safeties having the claimed wedge mechanism to engage the ribs 5. Even if there were motivation to provide safeties, Applicants can find no suggestion in the art to use safeties that would engage the ribs 5. Without more information regarding how the ribs 5 are utilized for guidance, it is difficult to speculate on how such a safety would be devised. It is noted that the tapered surfaces of the ribs 5 would have required a modification to the safeties of GB '356, which are designed to engage a conventional guide rail 30, which provides parallel gripping surfaces for the safeties. It is also noted that any safety which would have been intended to engage tapered surfaces of the rib 5 would have to account for the variation in distance between the safety and the rib 5 as the car (and safety) floated laterally toward and away from the wall from which the rib 5 projects. It is also noted that the guide wires 11 of the counterweight (or the analogous members for the car, if any) appear to have been more likely engagement features for such a safety. It does not appear that there would have been any objective reason to provide any type of safeties on the car to engage the ribs 5.

Further still, even ignoring all of the foregoing, Applicants submit that the asserted combination still would not disclose or suggest every feature recited in claim 15. The Final Rejection admits that the asserted combination fails to disclose having a friction surface applying a pressure of not more than approximately 50 psi on the non-metallic guide rail. According to the Final Rejection, it would have been obvious to have utilized the formula disclosed in GB '356 to employ the claimed pressure. However, the formula recites friction force as a function of spring force, coefficient of friction and wedge angle. The formula does not reflect or depend on pressure, so Applicants do not understand how deriving a specified pressure would have been obvious. In this regard, the Final Rejection asserts that "pressure equals force (spring force) over area (contact area)." However, Applicants find no disclosure in GB '356 regarding contact area.

Therefore, Applicants submit that the asserted combination fails to disclose or suggest at least the feature recited in claim 15 regarding a friction surface that is sized and a wedge that is shaped so that, when urged by the horizontal locator into contact with the non-metallic guide rail, the friction surface is wedged against the non-metallic guide rail with a pressure of not more than approximately 50 psi on the non-metallic guide rail, arresting the motion of the elevator car.

Kopman et al., which is cited for its disclosure regarding vulcanized rubber, and Pearson, which is cited for its disclosure regarding bi-directionality, are not understood to disclose the features that are absent from the teachings of DE '936 and GB '356.

Therefore, the cited combination does not disclose or suggest each feature of the invention claimed in claim 15. Further, there would have been no objective reason for the asserted combination. Therefore, with respect to the rejection of claim 15 (and dependent claims 16-21 and 23-24), the Examiner has failed to meet his burden to establish a prima facie case of obviousness under 35 U.S.C. § 103.

(c) Whether claim 25 is unpatentable under § 103(a) over DE '936 in view of GB '256.

According to the Final Rejection, claims 25-30 and 33 are unpatentable over DE '936 in view of GB '356, claim 31 is unpatentable over DE '936 in view of GB '356, and further in view of Kopman, and claim 34 is unpatentable over DE '936 in view of GB '356, and further in view of Pearson.

The Final Rejection states that DE '936 discloses an elevator system comprising a plurality of non-metallic guide rails formed of concrete 5. According to the Final Rejection, one having ordinary skill in the art would recognize that ribs 5 of DE '936 are guide rails. The Final Rejection admits that DE '936 does not disclose a guide rail safety device, and relies of GB '356 for the teaching of such a device. According to the Final Rejection, it would have been obvious "to have utilized a guide rail safety device for the elevator system taught in DE '936 as taught by GB '356 in order to provide a self-regulating safety brake for the elevator system."

Applicants respectfully submit that the Examiner has not met the burden of proof required to support a rejection under 35 U.S.C. §103.

Again, Applicants will attempt to address the merits of the rejections based on Applicants' understanding of DE '936.

For the reasons set forth above in the discussion of the rejection of independent claim 15, Applicants respectfully disagree with the assertion that one having ordinary skill in the art would recognize that ribs 5 of DE '936 are guide rails. Thus, Applicants do not understand DE '936 (and therefore the asserted combination) to disclose or suggest the features recited in claim 25 regarding a non-metallic guide rail, an elevator car riding on such a guide rail or a friction surface that is wedged against the non-metallic guide rail *by motion of* the elevator car along the non-metallic guide rail.

As also set forth above in the discussion of the rejection of independent claim 15, even assuming that DE '936 discloses non-metallic guide rails and an elevator car riding on such a guide rail, it is not believed that one of skill in the art would have been disposed on any objective basis to combine the cited documents as suggested in the Final Rejection in order to utilize safeties having the claimed wedge mechanism to engage the ribs 5.

Further still, even ignoring all of the foregoing, Applicants submit that the asserted combination still would not disclose or suggest every feature recited in claim 25. The Final Rejection admits that the asserted combination fails to disclose "having a relative coefficient of friction of at least 1.0 between the friction surface and the non-metallic guide rail." According to the Final Rejection, it would have been obvious to have utilized the formula disclosed in GB '356 to employ the claimed coefficient of friction. Admittedly, the formula recites friction force as a function of spring force, coefficient of friction and wedge angle. However, there is no indication in GB '356 (or anywhere else in the art) that a coefficient of friction in the claimed range would be optimum. In fact, GB '356 asserts that the disclosed device is less sensitive than conventional devices to variations in relative the coefficient of friction (page 1, lines 101-107). Therefore, Applicants submit that the asserted combination fails to disclose or suggest at least the feature recited in claim 25 regarding friction surface is formed of a material that has a coefficient of friction of approximately 1.0 relative to the non-metallic guide rail.

Kopman et al., which is cited for its disclosure regarding vulcanized rubber, and Pearson, which is cited for its disclosure regarding bi-directionality, are not understood to disclose the features that are absent from the teachings of DE '936 and GB '356.

Therefore, the cited combination does not disclose or suggest each feature of the invention claimed in claim 25. Further, there would have been no objective reason for the asserted combination. Therefore, with respect to the rejection of claim 25 (and dependent claims 26-31 and 33-34), the Examiner has failed to meet his burden to establish a prima facie case of obviousness under 35 U.S.C. § 103.

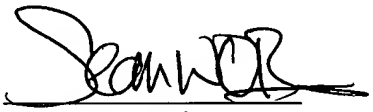
Conclusion

As Applicants have traversed each and every rejection raised by Examiner, it is respectfully requested that the rejections be reversed and the rejected claims be passed to issue.

Please charge any deficiency in fees associated with filing this response to our Deposit Account No. 15-0750, Order No. OT-4551.

Respectfully submitted,

Frederick H. Barker, et. al.



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9. APPENDIX

Claims involved in the Appeal:

15. (Twice Amended) A guide rail safety device, for an elevator car riding on a non-metallic guide rail formed of concrete, the guide rail safety device comprising:

a housing;

a wedge disposed in the housing, the wedge having a friction surface aligned for contact with the non-metallic guide rail;

at least one horizontal locator disposed in the housing, for engaging the wedge and urging the friction surface into contact with the non-metallic guide rail so that the friction surface is wedged against the non-metallic guide rail by motion of the elevator car along the non-metallic guide rail; and

an actuator for triggering urging of the friction surface by the horizontal locator,

wherein the friction surface is sized and the wedge is shaped so that, when urged by the horizontal locator into contact with the non-metallic guide rail, the friction surface is wedged against the non-metallic guide rail with a pressure of not more than approximately 50 psi on the non-metallic guide rail, arresting the motion of the elevator car.

16. The guide rail safety device as claimed in claim 15, wherein the wedge further comprises a bearing surface that is harder than and inclined relative to the friction surface for engagement by the horizontal locator.

17. The guide rail safety device as claimed in claim 16, wherein the bearing surface is comprised of a material that is selected from steel and iron.

18. The guide rail safety device as claimed in claim 16, wherein the wedge further comprises a wedge-shaped body, wherein the friction surface is integral with the wedge-shaped body, and wherein the bearing surface is affixed to the wedge-shaped body.

19. (Amended) The guide rail safety device as claimed in claim 15, wherein the friction surface is formed of a material that has a coefficient of friction of approximately 1.0 relative to the non-metallic guide rail.

20. The guide rail safety device as claimed in claim 15, wherein the friction surface is comprised of rubber material.

21. The guide rail safety device as claimed in claim 20, wherein the rubber material of the friction surface comprises vulcanized rubber.

22. The guide rail safety device as claimed in claim 15, wherein a plurality of the wedges is provided on each of two opposing sides of the non-metallic guide rail.

23. The guide rail safety device as claimed in claim 15, wherein the horizontal locators urge the friction surface into contact with the non-metallic guide rail in response to longitudinal movement of the wedge relative to the housing, and wherein the actuator causes the wedge to move longitudinally relative to the housing.

24. The guide rail safety device as claimed in claim 15, wherein the guide rail safety device is bidirectional, and two of the horizontal locators are arranged so that only one of the two horizontal locators at a time urges the friction surface into contact with the non-metallic guide rail, and wherein the actuator can trigger the urging of the friction surface by either of the two horizontal locators.

25. (Twice Amended) A guide rail safety device, for an elevator car riding on a non-metallic guide rail, the guide rail safety device comprising:

a housing;

a wedge disposed in the housing, the wedge having a friction surface aligned for contact with the non-metallic guide rail, the friction surface being formed of a material that has a coefficient of friction of approximately 1.0 relative to the non-metallic guide rail;

at least one horizontal locator disposed in the housing for engaging the wedge and urging the friction surface into contact with the non-metallic guide rail so that the friction surface is wedged against the non-metallic guide rail by motion of the elevator car along the non-metallic guide rail; and

an actuator for triggering urging of the friction surface by the horizontal locator.

26. The guide rail safety device as claimed in claim 25, wherein the wedge further comprises a bearing surface that is harder than and inclined relative to the friction surface for engagement by the horizontal locator.

27. The guide rail safety device as claimed in claim 26, wherein the bearing surface is comprised of a material that is selected from steel and iron.

28. The guide rail safety device as claimed in claim 26, wherein the wedge comprises a wedge-shaped body, wherein the friction surface is integral with the wedge-shaped body, and wherein the bearing surface is affixed to the wedge-shaped body.

29. (Amended) The guide rail safety device as claimed in claim 25, wherein the friction surface is sized and the wedge is shaped so that, when urged by the horizontal locator into contact with the non-metallic guide rail, the friction surface is wedged against the non-metallic guide rail with a pressure of not more than approximately 50 psi on the non-metallic guide rail, arresting the motion of the elevator car.

30. The guide rail safety device as claimed in claim 25, wherein the friction surface is comprised of rubber material.

31. The guide rail safety device as claimed in claim 30, wherein the rubber material of the friction surface comprises vulcanized rubber.

32. The guide rail safety device as claimed in claim 25, wherein a plurality of the wedges is provided on each of two opposing sides of the non-metallic guide rail.

33. The guide rail safety device as claimed in claim 25, wherein the horizontal locators urge the friction surface into contact with the non-metallic guide rail in response to longitudinal movement of the wedge relative to the housing, and wherein the actuator causes the wedge to move longitudinally relative to the housing.

34. The guide rail safety device as claimed in claim 25, wherein the guide rail safety device is bidirectional, and two of the horizontal locators are arranged so that only one of the two horizontal locators at a time urges the friction surface into contact with the non-metallic guide rail, and wherein the actuator can trigger the urging of the friction surface by either of the two horizontal locators.